



PILGRIMS' PROGRESS

Thanksgiving is just around the corner. During the next few weeks, American kitchens will be stocking up on turkey, cranberry sauce and pumpkin pie. In elementary schools around the country, however, children will be learning about the Pilgrims to whom the Thanksgiving tradition is attributed.

Most school pageants celebrating Thanksgiving show the Pilgrims stepping from a boat onto a large rock known as Plymouth Rock. What was the landscape of New England like when the Pilgrims arrived at Plymouth on Dec. 21, 1620?

After more than two months at sea, the *Mayflower* arrived too far north to suit the Pilgrims. The settlers had anticipated a landfall much farther south, perhaps around Chesapeake Bay. Although the Pilgrims landed on Cape Cod in November, it was not until Dec. 21 that the site of Plymouth was chosen. Dropped on a wintry foreign shore with little food, no shelter and a climate much harsher than England's meant sure death for many.

The English city of Plymouth from which the small group of settlers departed on Sept. 6 has a temperate climate compared to that of New England. Seldom does the temperate marine climate of southwestern England produce snow or even subfreezing weather. But the typical New England winter is harsh with subfreezing temperatures, high winds and frequent and heavy snows. Half the settlers died that first winter.

Survivors set about planting crops

the following spring. As the story goes, only after Indians of the Wampanoag tribe taught the Pilgrims to place fish beneath the planted seeds, and perhaps shared some seeds of domesticated American plants (corn, pumpkins and beans), did adequate crops begin to grow. Poor agricultural results in the beginning came not only from poor soil, but also because the cleared soils of the middle latitude forest were very acidic. A herring placed beneath seeds allowed plants to draw on the nutrients released by the decaying carcass. But calcium from the bones and flesh of the fish also raised the soil pH, or neutralized the soil acid, and enhanced the plants' abilities to utilize the nutrients.

Such lessons in dealing with the soils of New England were difficult ones. They often meant the difference between life and death, particularly under harsh weather conditions, poor nutrition and only home remedies. Within three years, however, the subsistence farming and fishing of the little colony had become successful. Within 14 years, the colony had expanded to form a nearby town of Duxbury and eight more towns were started over the next 10 years.

labor was about the best New England farmers could do.

This region had been glaciated by the great continental glacier whose last vestiges had melted from the region only about 10,500 years before the Pilgrims arrived. The glacier scoured to the bedrock as it scrubbed southward, creating the north-south valleys of the Hudson, Connecticut and Merrimack rivers. As the glacier melted, it dropped a thin layer of glacial drift on top of the scoured bedrock. This drift was made up, not only of small particles of rock material, but also erratics, or boulders, plucked from the bedrock by the glacier as it passed over southern Canada. Varying generally in size from a few inches to several feet across, these erratics presented major problems to the Pilgrims' wooden plows.

Farmers found that the best use for erratics was to use them to build fences. Today, the numerous stone fences throughout New England are mute testimony to the rugged environment that generations of farmers have attempted to overcome.

It wasn't until 1744 that the rock named Plymouth was recognized as having possible historical significance. During that year, the boulder broke in half as it was being dragged by horses to another resting place.

Of course, the rest of the story is that Plymouth Rock is an erratic — a piece of granite, probably from Canada, dropped on the shore of Cape Cod Bay by a glacier several thousand years before. Today it rests in a mausoleum in Plymouth, Mass. — a broken rock glued back together, with 1620 boldly carved on its side. It serves well as a symbol of Pilgrim spirit and determination in the face of severe hardship. Happy Thanksgiving!

And that is Geography in the News. November 22, 2002. #651.

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Origin of Thanksgiving



But there was a footnote to the agricultural problems that the Pilgrims endured. The soils of New England were never to be major producers of cash crops. Subsistence agriculture carried on in small plots of land with considerable input of